

AUSTRALIAN HESPERIIDAE. IV.

NOTES AND DESCRIPTIONS OF NEW FORMS.

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Brigadier W. H. Evans has sent me further critical notes as the result of his investigations on this family at the British Museum. It is fortunate that the British Museum has now acquired the specimens of this family that belonged to the late H. Fruhstorfer, so Brigadier Evans has been able to examine most of Fruhstorfer's types and to supplement the inadequate published descriptions. Fruhstorfer seems to have had very little appreciation of generic distinctions, and although he states (*Iris*, xxiv, 1910, p. 60) that he based his classification on that of Watson, and Elwes and Edwards, his use of genera often differs from these authors. Fruhstorfer makes little, if any, use of antennal characters and male brands, which distinguish species that are otherwise similar in general appearance. A number of Mabilie's types are now also in the British Museum.

Mr. T. G. Campbell has recently sent a fine collection of skippers from Brock's Creek, North Australia. These specimens are now in the Australian Museum and with the Division of Economic Entomology, Canberra. Besides the species mentioned later, the following new and important records are in this collection: *Toxidia sexguttata sela* Waterhouse, 1932 (February); *Neohesperilla senta* Miskin, 1891 (January to March); *Neohesperilla xanthomera* Meyrick and Lower, 1902 (February, March); *Ocybadistes hypomeloma vaga* Waterhouse, 1932 (February and June).

This part adds to and corrects part ii in These PROCEEDINGS for 1932, where a list of the chief references is given (p. 238). The types of all the new races are in the Australian Museum, Sydney, and typical specimens are in the British Museum.

TRAPEZITES IACCHOIDES Waterhouse.

During September, 1932, this rare species was searched for at Como, N.S.W., without success, but five males were caught during October of that year. In September, 1933, it was on the wing, showing that the spring of 1932 was a late one.

A new locality has been found near Hawkesbury Lookout, Springwood, where the species was not uncommon during September and October, 1933. Females were exceedingly rare, not more than four being seen. Most of the males were caught in an area of about one hundred square yards.

TRAPEZITES PHIGALIOIDES Waterhouse.

Males of this species were not uncommon on the Blue Mts., at Mt. Victoria and Katoomba, in December, 1932. Two females only were caught at Mt. York. Males have also been caught at Killara in October, 1932, and 1933.

HESPERILLA CHAOSTOLA Meyrick.

The holotype of this species is a male from Blackheath, caught in November. It is a rare species in New South Wales, as I have until recently had only six males and two females, all from the Blue Mts.

In December, 1932, at Mt. Victoria, I found feeding on *Gahnia Sieberi* several nearly full-grown larvae which were unknown to me. The larvae of *Hesp. donnysa* were plentiful on the same plant and on two occasions I found both types of larvae on the same clump of *Gahnia*. An attempt to get the *Gahnia* to grow in Sydney failed. The larvae were left at Mt. Victoria and visited each month until May, 1933. I found that they grew very slowly and had not pupated in May. Most had pupated in September and six pupae were brought to Sydney. In October a pair emerged and proved to be this species.

The life cycle is of extreme interest. All larvae found in December, 1932, were in the last instar, except one, which was just about to enter the last instar. In January, 1933, a further search was made and several very small larvae were found, which were not beyond the second instar. These small larvae were from eggs laid in October or November, 1932, whilst the large larvae were undoubtedly from eggs laid in October or November, 1931.

The larva is of the usual *Hesperilla* type, but is more highly coloured than that of the other species. The segment behind the head is bright red and the head is covered with longish white hairs. During the daytime the larva lives in a shelter made by joining the tips of the leaves of the *Gahnia* together and enters from below and lives head downwards. It pupates in the same shelter, also head downwards, fastened by the tail, but without a silken pad. This method of pupation is quite different from the other species of the genus, but is similar to that of *Motasingha atralba*. The pupa is nearly black and the pupal cap is somewhat similar to that of *Hesp. donnysa*, but the corrugated platform is not raised so much.

The life cycle of two years of this species is remarkable, more especially as the closely allied species, *Hesp. donnysa*, feeding on the same plant in the same locality, has a life cycle of one year.

Hesp. chaostola must be rare on the Blue Mts., as some thousands of plants were searched by myself and three schoolboy friends and only six pupae were found. At the same time many dozen larvae of *Hesp. donnysa* were found. It is one of the earliest Hesperids on the wing, appearing about the middle of October.

Now that perfect specimens are available from the Blue Mts., I am able to confirm a previous opinion that Victorian specimens constitute a new race, as follows.

HESPERILLA CHAOSTOLA CHARES, n. subsp.

Upperside not nearly so dark as in the typical race, spots slightly larger, especially those in 4 and 5 of forewing, and more heavily scaled, often an extra spot in 2 (not in holotype); usually indistinct patches of scales parallel to termen of hindwing, cilia of hindwing paler.

Underside: Apex of forewing and hindwing lilac-grey and not markedly dark purple as in the typical race.

The greatest difference is shown by the underside, which is very dark, even in poor specimens of the typical race, and very much paler in *chares*.

Holotype male, Beaconsfield, Vict., 17 Oct., 1904 (Fig. 691 in *Butterflies of Australia*, Waterhouse and Lyell, 1914); allotype female, Beaconsfield, 26 Oct.,

1904 (Fig. 690, *loc. cit.*); paratype males and females, Beaconsfield, 17 Oct. to 7 Nov., 1904 (all caught by Dr. W. E. Drake) in Australian Museum. I have specimens from Ringwood, Vict., and Mr. A. N. Burns caught two females in the Grampians, Vict., in Nov., 1931.

Tasmanian specimens probably constitute another race, but I have only one male for comparison.

MOTASINGHA DIRPHIA DEA, n. subsp.

Since my previous paper I have caught several more specimens of *M. dirphia* on the Blue Mountains. These are smaller, with smaller and paler markings, and are considerably darker in both sexes than the race *dilatata* Waterhouse, 1932, found at the sea coast near Sydney.

The holotype male from Blackheath (November) has three distinct subapical dots, a cell spot and a spot in area 3 on the upperside of the forewing. On the underside of the hindwing it has the large central white spot ringed with black and one discal white dot. Some males from Blackheath have only one or two subapical dots, others have a spot in area 2 of the forewing. I have no male with three white discal dots on the underside of the hindwing; one usually is present in area 6 and often dark dots in areas 2 and 3.

The allotype female (Blackheath, December) has three distinct subapical dots, cell spot and spots in areas 1a, 2 and 3 of the forewing, but not extended along the veins as in *dilatata*. The underside of the hindwing has the central white spot ringed with black and three discal white dots. Other females have an obscure cell spot on the upperside of the hindwing and two of the three discal spots on the underside of the hindwing represented by black dots.

This race has been taken at Blackheath from November to February; Mt. Victoria, December and January; Katoomba, November; Wentworth Falls, November. Specimens from Berowra and Killara are nearer this race than *dilatata*.

TARACTROCERA Butler.

Catalogue Fabrician Diurnal Lepidoptera, p. 279, 1869.

This genus is distinguished by the spatulate and excavate antennal clubs with very short or entirely obsolete apiculi.

TARACTROCERA DOLON Plotz.

Apaustus dolon Plotz, *Stett. Ent. Zeit.*, 1884, p. 165.—*T. dolon*, Waterhouse and Lyell, *Butt. Aust.*, 1914, p. 201, figs. 876-7.

The description of Plotz is poor and his unpublished coloured figure rather misleading. The name *dolon* was a MS. one given by Herrich-Schaeffer. It is not possible to say from where the type came, but very probably from near Rockhampton. Brigadier Evans believes that the species figured in the *Butterflies of Australia* is the one described by Plotz, but I incline to the opinion that if the type is ever discovered, it will be found to be a race of *Ocybadistes walkeri* Heron, 1894; however, the name can remain for the present. In eastern Australia the butterfly figured in the *Butterflies of Australia* occurs from Brisbane to the Cairns district. The following race from North Australia presents considerable differences.

TARACTROCERA DOLON DIOMEDES, n. subsp.

Larger and brighter and with broader markings than specimens from eastern Queensland. In appearance somewhat like a small *T. ina* Waterhouse, 1932, but the subapicals of the forewing are not divided by darker veins and the male has

raised scales over veins 1a, 2, and sometimes below 3, whereas the male of *T. ina* has no sex brand. In both sexes the undersides are a very much brighter orange than in *dolon*. In the male the spot in area 6 on the hindwing is very variable in size.

I have had this race in my collection from Darwin (September) for some years, and it is also in the British Museum from the same locality. Mr. Campbell has sent a series from Brock's Creek, North Australia, caught from January to April.

TARACTROCERA INA Waterhouse.

PROC. LINN. SOC. N.S.W., 1932, p. 228.

This is a rare species, as Mr. Campbell was only able to secure four specimens at Brock's Creek in February and March. These agree with the type in the South Australian Museum, from Darwin. Further material both from North Australia and Queensland is necessary to determine if the specimens I listed from Queensland in 1932 are a distinct race or not. However, a small series described below presents certain differences.

TARACTROCERA INA IOLA, n. subsp.

In this race the orange bands of the upperside are darker and broader than in the typical race. It is also a smaller insect. Six males and three females were caught on Hayman Is., Whitsunday Group, by Mr. F. A. McNeill, of the Australian Museum staff, in January. The male has no sex brand on the forewing. The female is somewhat similar in shape to the female of *T. anisomorpha* Lower, 1911, but the subapicals of the forewing are divided by the darker veins and the underside is not so uniformly suffused with orange-yellow.

TARACTROCERA ANISOMORPHA Lower.

Bibla anisomorpha Lower, *Trans. Roy. Soc. S. Aust.*, 1911, p. 146.—*T. bavius anisomorpha*, Waterhouse, PROC. LINN. SOC. N.S.W., 1932, p. 229.

Brigadier Evans has examined the type of *T. bavius* Mabille from Timor, now in the British Museum, and finds it is a race of *T. nigrotimbata*, so *T. anisomorpha* will rank as a full species. Mr. Campbell has taken it at Brock's Creek in January, February and April.

TARACTROCERA ILIA Waterhouse.

T. udraka ilia Waterhouse, PROC. LINN. SOC. N.S.W., 1932, p. 229.

The type of *T. udraka* Fruhstorfer, 1910, could not be found in his collection, now at the British Museum, and Brigadier Evans considers that, as Fruhstorfer's description agrees much better with *Ocybadistes ardea* Bethune-Baker, 1906, *udraka* is best considered as identical with *ardea*. *T. ilia* will then rank as a full species.

OCYBADISTES Heron.

Ann. Mag. Nat. Hist., 1894, xiv, p. 105.—*Padraona*, Waterhouse (*nec* Moore), PROC. LINN. SOC. N.S.W., 1932, p. 230.

Brigadier Evans considers that *Padraona* is best restricted to Oriental species; eastern allied forms have more or less flattened antennal clubs and a different type of male genitalia and should be placed in the genus *Ocybadistes*, type *O. walkeri* Heron, 1894.

OCYBADISTES FLAVOVITTATA Latreille.

Hesperia flavovittata Latreille, *Encyclopédie Méthodique*, ix, p. 768, 1824.—*Padraona hespera* Waterhouse, PROC. LINN. SOC. N.S.W., 1932, p. 233.

Brigadier Evans has made a critical examination of the specimen mentioned in my previous paper on page 232. This specimen, now in the British Museum, was originally in the Boisdual collection and bears Latreille's label *flavovittata*. It is without doubt one of the specimens mentioned when Latreille wrote his description. It is a female and belongs to the species with a narrow sex brand in the male. Therefore my name *hespera* falls as a direct synonym. This being so, the synonymy of my previous paper requires considerable alteration. The earliest name with any certainty for the species with the broad sex brand in the male is *O. walkeri* Heron, 1894, typically from Damma Is. Both species vary in a similar manner in Australia, so the following names are supplied for them. *O. flavovittata* so far has only been found in Australia, but *O. walkeri* extends beyond Australian limits.

OCYBADISTES FLAVOVITTATA VESTA Waterhouse.

Padraona hespera vesta Waterhouse, PROC. LINN. SOC. N.S.W., 1932, p. 234.

This is the race found typically at Port Darwin. It is small and bright. Mr. Campbell found it commonly at Brock's Creek from January to April and in June. Specimens from North Queensland constitute the next race.

OCYBADISTES FLAVOVITTATA CERES, n. subsp.

Padraona hespera vesta Waterhouse, PROC. LINN. SOC. N.S.W., 1932, p. 234 (in part).

This name is introduced for specimens caught by myself at Kuranda, Qld., in June. It occupies an intermediate position between the race *vesta* and typical *flavovittata* from Sydney. They are larger, but not so bright as *vesta* and smaller and duller than *flavovittata*. They correspond to the race *sonia* of *walkeri* found also in North Queensland. I have this race from Mackay to the Cairns district.

OCYBADISTES FLAVOVITTATA FLAVOVITTATA Latreille.

Padraona hespera hespera Waterhouse, PROC. LINN. SOC. N.S.W., 1932, p. 233.

This race typically is from Sydney, but is found from South Queensland through New South Wales and Tasmania. It is apparently absent from Victoria.

OCYBADISTES WALKERI Heron.

Ann. Mag. Nat. Hist., 1894, xiv, p. 106.

The type locality assigned to this species is Damma Is. Port Darwin is given as a second locality. Brigadier Evans informs me that these latter specimens constitute a distinct race, mentioned below. The Australian races vary in the same way as those of *O. flavovittata*, with an additional race, *hypochlora* Lower, 1911, from South Australia. These races are supplied with names as follows.

OCYBADISTES WALKERI SOTHIS, n. subsp.

Padraona flavovittata flavovittata, Waterhouse, PROC. LINN. SOC. N.S.W., 1932, p. 233.

This name replaces that of *flavovittata* as the result of finding the female specimen in the Oberthur collection, now in the British Museum, bearing the label *flavovittata*. It is the commonest *Ocybadistes* found at Sydney and has a broad sex brand in the male and is decidedly greenish on the underside. It has already been well described. The type series consists of five males and two females reared from a batch of eggs laid by one female at Sydney in April, 1932. The butterflies emerged in October with a pupal duration of five weeks. It is

found at Sydney from August to April and has a longer period of flight and is commoner than *flavovittata*. Its range extends from Brisbane throughout coastal New South Wales. It is also found in Tasmania.

OCYBADISTES WALKERI SONIA, n. subsp.

This name is introduced for specimens typically from Kuranda. It is somewhat similar to the previous race, is constantly smaller and the underside is not so conspicuously green. I have it from Kuranda in July, September and October; also from Cooktown and Mackay. It corresponds to the race *ceres* of *flavovittata*.

OCYBADISTES WALKERI OLIVIA, n. subsp.

Padraona flavovittata walkeri, Waterhouse, PROC. LINN. SOC. N.S.W., 1932, p. 233.

This race is very distinct from typical *walkeri* from Damma Is., having rounded wings and broad markings. The female before me has only a slight trace of green colour on the underside. I have it from Port Darwin in September, and Brock's Creek in February and April.

TELICOTA MOORE.

Scudder's selection of *augias* Linn. as the genotype of *Astycus* Hübner cannot stand, as the first time it was used by Hübner he included only European species. It was also used as a genus of beetles about the same time. The species listed in my previous paper must now be placed under *Telicota* Moore, genotype *Papilio augias* Linn.

TELICOTA KREFFTI ARGILUS, n. subsp.

This race has rounder wings and broader and brighter markings than typical *krefftii*, the holotype male of which is in the Australian Museum from Cape York. It is also slightly smaller and the underside of the hindwing has the band well developed, whilst in typical *krefftii* the underside of the hindwing is almost without markings.

Holotype male and allotype female from Port Darwin without dates. It has been caught at Port Darwin in May, November and December and is in the British Museum from Baudin Is.

The only species found so far in this district with which it might be confounded is the paler and narrower winged *T. augias argeus*.
